

## Claims

1. A travelling field machine with a stator (10) and a rotor which are separated by an air gap and each of which comprises at least one stator coil (14) or one rotor coil, respectively, wherein

- the stator (10) or the rotor, respectively, comprising a soft magnetic iron body with a stator back (11) or a rotor back, respectively, in which spaced grooves (16) are formed, generating teeth (18), and

- in each of the grooves (16) several conductor bars (20) of the stator coil (14) or the rotor coil, respectively, are arranged in series comprising end connectors (22) arranged at the faces of the stator (10) or the rotor, respectively, which connect the conductor bars (20) extending across several grooves (16), wherein

- the conductor bars (20a, 20b) are arranged in a neighbouring relationship in each of the grooves (16), comprising conductor portions of different length projecting beyond the faces of the stator (10) or rotor, respectively, and

- the end connectors (22) are at least partially arranged layered in tiers in the axial direction at the faces of the stator (10) or the rotor, respectively.

2. The travelling field machine according to Claim 1, wherein

- the end connectors (22) are joined at both of their end portions with the ends (26) of the conductor bars (20) by means of transverse portions (28).

3. The travelling field machine according to Claim 2, wherein

- the transverse portions (28) at the two end portions of the end connectors (22) to the respective ends (26) of the conductor bars (20) are of different lengths and/or are angled under different angles.

4. The travelling field machine according to Claim 1, wherein

- the conductor bars (20) have a connecting area each at their ends, which matches with corresponding portions at the end connectors (22) for a mechanical and electrical connection.

5. The travelling field machine according to Claim 4, wherein

- the connecting areas at the ends of the conductor bars (20) are joined and/or welded or brazed with correspondingly shaped recesses (28a) of the transverse portions (28).

6. The travelling field machine according to Claim 5, wherein

- the end portions of the end connectors are integrally joined with the end portions of the conductor bar by laser welding.

7. The travelling field machine according to Claim 1, wherein

- the grooves taper or expand towards an air gap between the stator and the rotor, and
- the conductor bars arranged in the grooves, depending on their position in the groove comprise a width which is at least partially adapted to the groove width.

8. The travelling field machine according to Claim 1, wherein

- at least at one of the two faces of the stator the end connectors are arranged in the direction of the stator back and in the direction of the air gap between the stator and the rotor, with
- the length of the conductor bars is increasing both from the stator back and the air gap between stator and rotor towards the centre of the grooves.